IN THE SPECIFICATION

The REMARKS section of this response discusses the specific amendments made to the specification. Appendix B contains a marked-up copy of the specification to show the changes made.

Please amend the paragraph bridging pages 1 and 2 of the specification to read as follows.

An obstacle in realizing next-generation microelectronic and optoelectronic devices and optimal integration of these devices is found in lattice mismatches between different crystals of group III-V semiconductor materials. Generally, the lattice mismatch between a substrate and an epitaxial over-layer induces strains within the over-layer. This may lead to strain relaxation which can result in formation of material defects such as dislocations within the crystalline structure of the over-layer. Fig. 1 illustrates a mismatched over-layer 1 epitaxially grown over a substrate 2, the boundary between the over-layer 1 and the substrate 2 being indicated with reference numeral 4. As shown in Fig. 1, the lattice constant associated with the over-layer 1 is different from the lattice constant associated with the substrate 2, hence the term "mismatched over-layer". Strain relaxation due to lattice mismatch is accommodated by the formation of mismatch dislocations 3 within the crystal. Defects within a crystal generally degrade the performance of devices made from the crystal, because such defects can scatter movement of carriers (electrons and holes) and can act as carrier traps and/or recombination centers. It is thus useful to provide means for growing a crystal over-layer which has different lattice constant from the substrate on which the over-layer is grown, in such a fashion that strain relaxation does not occur and mismatch dislocations do not form. Fig. 2 is an example of a schematic representation of how lattice mismatch is taken by a condensed layer of group-V species, in which the structure of over-layer 1 is preserved and no mismatch dislocations are formed.